



Nursing and Health Policy Perspectives

Getting the COVID-19 pandemic into perspective: a nursing imperative

Dr. Tracey McDonald, AM PhD FAcN GAICD,
Associate Editor, International Nursing Review
Journal of the International Council of Nurses, Geneva, Switzerland
Email: McDonald@icn.ch and Website: <http://traceymcdonald.info/>



Abstract

As we approach the seventh month of the latest pandemic to wreak havoc and death across all societies, it beggars belief that many world and national leaders have acted surprised at the speed and destructive efficiency of COVID-19. Nurses are not surprised by the level of misery and devastation that infectious diseases can cause. We have seen it all before. In every outbreak through history, nurses have responded to the dangers that direct engagement with such crises entails. The inherent risks nurses face in controlling potentially fatal pathogens are compounded by flaccid public policy and incompetent management, resulting in poorly resourced preparedness for the epidemics and pandemics that routinely punctuate our history. That nurses are repeatedly placed in such precarious work environments is an indictment on all involved. Over time, nurses responding to populations in crisis have learned not to rely too heavily on those occupying leadership positions for front-line resources and protection or even early warnings or open disclosure about contagion risk, case numbers and outcomes. Once the danger has passed, the usual public expressions of gratitude for nurses who put themselves in harm's way to help victims of these catastrophes seem to fade, amid hasty efforts to consolidate policies, processes and hierarchies back to the same settings that allowed the current crisis to flourish. So far in this pandemic, an unconfirmed number of nurses and other health workers have either died usually as a result of their involvement with infectious patients or become infected themselves. Data collection on this is hap-hazard at best, with nurse deaths absorbed within the aggregated morbidity data reported on during pandemics. This is despite nurses being the prominent professional workforce providing crucial front-line interventions to protect public health. It is time nurses involved themselves with the overdue reformation of public health policies, information management and health systems that would seek to return nurses to precarious work environments and trivialize foreseeable risks to us, our communities and patients.



Keywords: COVID-19, Health policy, History, Infection control, Leadership, Nursing policy, Nursing, Pandemic, Policy review

Introduction

Nurses have been present and engaged in safeguarding the health and wellbeing of others throughout recorded history. Wherever there were people, there were those who assessed their health and wellbeing problems, worked out feasible solutions and implemented them. Infectious diseases have also accompanied people throughout history. Outbreaks have posed very real threats to those weakened and debilitated by chronic conditions, as well as to the structure and operation of their societies, their civil order and prosperity.

In almost every pandemic, the contagion was spread by land, sea and air along trade or military routes, by people often oblivious of their role in spreading disease and social upheaval. Since before Alexander's army spread malaria, tuberculosis, smallpox and leprosy across the Middle East into Europe and Asia, the possibility of gaining political or financial advantage over others has been a dominant rationale for ignoring the potential for disease spread. Hippocrates (450-370 BC) frequently lamented the spread of such diseases in such ways.

The deadly inevitability of pandemics throughout human history is summarized in Table 1. If we are to learn any lessons from history, then the table below should provide a starting point.

At first glance, we can see that potentially pandemic diseases are spread by people, animals, birds and insects. The conditions for each pathogen or parasite to thrive are well known in most instances, and with considered effort, outbreaks can be avoided and controlled. We know that organisms mutate and develop resistance to drugs that are either poorly designed or misused. We also know that virulent pathogens rarely disappear. Rather they can mutate or lie dormant for many years awaiting favourable conditions to infect people again. Such patterns concerning typhoid, smallpox, influenza and bubonic plague appear regularly in the above table.

The most unpredictable factor in understanding infection is human behaviour. The only accessible information on the severity of pandemics has been mortality rates. Such aggregations provide scant detail on who is more vulnerable or how the public could avoid or treat infections.

Historically, pandemics have been triggered by mass movements of people carrying the pathogen across national borders and infecting many others who then spread it to more people and places. The table above shows historical involvements of military personnel, traders, explorers, and currently, we could

include tourists, refugees, business travellers and international workers as having similar roles in unintentionally spreading infection.

The squalor in which people live is also frequently mentioned as a cause of infectious outbreaks. Throughout history and currently, many countries settle for unsanitary sewerage systems and allow overcrowded settlements to be built in marshy or low-lying areas where people have access only to contaminated water. These conditions foster infectious pathogens and provide a breeding ground for cross-species transmission of the newer strains of coronavirus as well as its rapid spread between people. The systematic neglect and exploitation of impoverished citizens is a matter for national governments to address as a matter of urgency for the safety of the international community.

Governments and politicians have contributed to the development of pandemics over time. The table shows the impact of some of the decisions taken by leaders who attempted to hide or distort information about infectious outbreaks and the consequences of that action (See for instance the table entry for 1889 Russian Flu, 1918 Spanish flu and 2019 COVID-19). Interestingly, many pandemics were named for the place initially reporting the outbreak rather than where it started, prompting a reluctance, perhaps, to be the first to report infections. Current efforts to control the historical narrative may explain why so many national leaders are avoiding full disclosure about the origins of COVID-19 in their countries and not sharing reliable accounts of the spread, morbidity and mortality rates, and details of pandemic response strategies.

Lessons learned from history

Expert credibility

During the 1976 Swine flu outbreak in the USA (see table), the USA government responded decisively with a vaccination programme that was ceased early and was heavily criticized. The central lesson for nurses and others is that announcements of infection risk need to be accurate and timely without exaggeration and embellishment. Research credibility is crucial when engaging with political leaders who depend on experts for reliable information around which policy can be developed and resourced. Information has to be concise and clear about what is known and what is uncertain, and how this will change over time. Communication with policymakers and the general public on complex research and consequences

Table 1 Infectious disease outbreaks through the ages

Period	Infectious outbreak	Location	Nursing involvement	Sequelae
430-404 BC	Peloponnesian Plague (Typhoid Fever) which killed two-thirds of the population.	The disease started south of Ethiopia and moved into Egypt and Libya and then to Persia and Greece. The disease affected civilians and weakened armies such as the Athenians who were defeated by the Spartans at around that time.	The symptoms requiring nursing care included fever, thirst, bloody throat and tongue, red skin and lesions. LINK: Medical Life Sciences, Typhoid Fever History https://www.news-medical.net/health/Typhoid-Fever-History.aspx	Typhoid continued to be present with occasional outbreaks until the development of a vaccine in 1896. However, the bacillus, Salmonella Typhi, is now becoming drug-resistant due to overcrowding, unsanitary living environment, infection outbreaks and spread by international travellers and geopolitical upheaval of populations
165-180 AD	Antonine Plague	Artists of the time painted classic smallpox pustules typical signs of smallpox	Symptoms requiring intervention included fever, sore throat, diarrhoea and, if the patient lived long enough, pus-filled sores. LINK: Ancient History Encyclopedia, Antonine Plague https://www.ancient.eu/article/939/the-plague-at-athens-430-427-bce/	Emperor Marcus Aurelius was a victim of the pandemic just before the start of the fall of the Roman Empire
249-270 AD	Cyprian Plague	Possibly starting in Ethiopia, it passed through Northern Africa, into Rome, then onto Egypt and northward. The source of the affliction was interpreted by pagans as a punishment from the Gods	It started in Ethiopia then in Rome, Greece and Syria. City residents fled to the country, taking the disease further LINK: Ancient History Encyclopedia Plague of Cyprian, 250-270 CE, https://www.ancient.eu/article/992/plague-of-cyprian-250-270-ce/	Outbreaks recurred over the next 300 years. Britain was infected in 444 A.D. at the time of battles with the Picts and the Scots. Weakened by the pandemic, the British sought alliance with the Saxons, who eventually took over the island

Table 1 *Continued*

Period	Infectious outbreak	Location	Nursing involvement	Sequelae
541-542 AD	Justinian Plague	Origins in Egypt around the northern Nile area and spread to Alexandria, Palestine and on trade ships to Mediterranean countries and Constantinople and the Byzantine Empire	The plague was carried by the fleas on black rats. Victims requiring nursing suffered from nightmares, fevers, swollen behind ears, in the groin and armpits. Some became comatose or delusional. Many died suddenly while others lingered for days before dying. Medical training centred on Galen's beliefs about body fluids (or humours). Those unable to afford medical treatment relied on oral alkaloids, cold water baths, quarantine and rest.	The plague interrupted Emperor Justinian's plans to re-establish the Roman Empire back together and caused an economic slump. Some say that the widespread despair it caused triggered the spread of Christianity. That pandemic is believed to be the first occurrence of the Bubonic plague
			LINK: https://www.ancient.eu/article/782/justinians-plague-541-542-ce/	
600 BC to 11th Century and remains present today	Leprosy (Hansen's disease)	The bacteria (<i>M.leprae</i>) was discovered in 1873 in Norway by Dr. Gerard Hansen. A second leprosy bacteria (<i>M.lepramatosis</i>) that can infect other species, was discovered in 2008	Originated in East Africa and was spread by slave traders and along trade routes Before 1875, leprosy was thought to be hereditary and/or punishment from God. LINK: WHO Bulletin, Leprosy: Key facts https://www.who.int/news-room/fact-sheets/detail/leprosy	Leprosy continues to affect tens of thousands of people a year and, if not treated with antibiotics, can be fatal. Multidrug therapy (MDT) combining all three drugs was first recommended by the World Health Organization (WHO) in 1981
130BC – 1453 AD	Black Death Bubonic plague	Responsible for the death of one-third of the world population, this second large outbreak of the bubonic plague possibly started in Asia and moved west in caravans	Entered first through Sicily in 1347 AD in the port of Messina. It then spread rapidly across Europe	England and France were so affected by the Bubonic plague that they called a truce to the war. The Black Death so changed Britain's economic circumstances and population distribution that the feudal system became unsustainable
				LINK: Ancient History Encyclopedia, Black Death timeline https://www.history.com/news/black-death-time-line

1492	The Columbus ‘exchange’ With the arrival of Christopher Columbus’ ships, diseases that were endemic to Europe also arrived in the Americas. These included Smallpox, measles & bubonic plague	These diseases overwhelmed indigenous people and around 90 per cent died in the northern and southern continents. LINK: Ancient History Encyclopedia, Climate change Study, https://www.history.com/news/climate-change-study-colonization-death-farming-collapse	Indigenous communities had no immunity to these diseases and their known health interventions had no chance of stopping the spread of killer diseases. After so many indigenous people died, no one was left to tend many of their fields, and trees and other vegetation quickly reclaimed huge expanses of land previously used for agriculture	With no people occupying the land, enough carbon dioxide (CO_2) was removed from the atmosphere to cool down the planet, contributing to the coldest part of the mysterious period that has been called the Little Ice Age
1157 BC – 1520 1770's	Smallpox A devastating viral disease (variola virus) with 30% mortality and survivors left with scars and disability.	It is believed to have started in Egypt 3rd Century BC and was recorded in China 4th Century AD and Asia Minor 7th century AD. LINK: Encyclopaedia Britannica, Smallpox Disease, https://www.britannica.com/science/smallpox	Vaccination began in 1796 when Edward Jenner in England, observed the preventive effects of cowpox among milkmaids and developed an effective vaccine. The WHO smallpox eradication programme was completed in 1977. Eradication declared in 1980. Two samples of the virus remain in laboratories in the USA and Russia	The Aztec Empire was destroyed by a smallpox infection in 1520 BC. Many died and survivors were left debilitated. The Aztec warriors were unable to repel the Spanish explorers and Aztec communities were unable to continue subsistence farming
1967	It has been spread over centuries by people travelling for trade, exploration and by expanding populations	The Great Plague of London killed 75,000 to 100,000 people or 20% of London's population at that time. It was a return of the Bubonic Plague.	It began in 1665 in the slums of London. The spread of the plague by rats' fleas was not known at first and dogs and cats were slaughtered in their thousands because they were blamed for the spread of the disease. LINK: British National Archives, Great Plague of 1665-1666, https://www.nationalarchives.gov.uk/education/resources/great-plague/	Infections decreased in mid-1666 around the time of the Great Fire of London. LINK: Historic UK, The Great Fire of London 1666, https://www.historic-uk.com/HistoryUK/HistoryofEngland/The-Great-Fire-of-London/
1665-1666	The Great Plague of London killed 75,000 to 100,000 people or 20% of London's population at that time. It was a return of the Bubonic Plague.	Victims developed bubo lesions in armpits and groins then severe respiratory symptoms before death. They were quarantined in their homes and any objects or clothing they used were burned	Early cure of scrofula by a ‘royal touch’ was present in the Middle Ages and during the 12 century, visiting royal tombs and carrying a royal image was a common ‘treatment’.	
1720-1882	Tuberculosis (TB). Described as scrofula in the Middle Ages, TB's aetiology was discovered in 1720 by English physician Benjamin Martin who designed the sanatorium cure	Evidence of tuberculosis found in 2400 BC Egyptian mummies, early Chinese writings and in India LINK: National Center for Biotechnology Information (NCBI) The history of tuberculosis https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5432783/	From the 17th to mid 19th century TB was called consumption and phthisis and was very common among young adults. Nursing in sanatoriums focused on symptoms but also included addressing social conditions such as overcrowded houses, poor sanitation, malnutrition, quarantine, covering pustules and wounds, and burning used dressings	

Table 1 Continued

<i>Period</i>	<i>Infectious outbreak</i>	<i>Location</i>	<i>Nursing involvement</i>	<i>Sequelae</i>
1846-1860	3rd Bubonic plague	It started in China during the Yunan mining boom and moved to India and Hong Kong. Overall, 15 million people died in that pandemic.	The nursing interventions in affected countries were linked to quarantining victims and treating their symptoms. Face coverings were worn by nurses and physicians and incense burners were commonplace to reduce the stench. The dead were either burned or buried.	The plague is possibly a factor in triggering the Parthay and Taiping rebellions in China.
		Canton's proximity to Hong Kong introduced the plague that killed over 100 000 within 8 weeks, Outbreaks during the following decades were reported across the world. European countries had outbreaks until the 1960s	The extent of squalid, overcrowded living conditions and poverty in cities and villages prevented the plague from being eradicated. These same conditions persist today in many societies, ensuring the ongoing presence of this disease	India suffered extensive casualties, and British authorities imposed repressive policies justified by 'public safety' reasons, triggering a series of revolts. The British Raj ended in 1948. The plague was still active in India until 1960. The disease remains endemic in Hong Kong and Yunan
1870	First Cholera Pandemic:	Originated in Russia where 1 000 000 people died. This was the first of seven cholera pandemics occurring between 1870 and today.	The pathogen is spread through faeces-infected water and food. A vaccine was created in 1855, but pandemics have continued. As global temperatures increase, it is anticipated that these pandemics will increase in frequency and intensity.	British soldiers carried it to India where millions died. Over the years, the British navy spread it across their empire and to Spain, Africa, China, Japan Italy, Germany and America
		LINK: National Center for Biotechnology Information (NCBI) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6501942/		
1882	Malaria	Malaria has accompanied human settlement since Neolithic times. Before 1882 Malaria was thought to be caused by swamp gas. The mosquito-borne parasite was discovered in 1880 by Alphonse Laveran, a French military surgeon in Algiers.	The nursing of patients with malaria included the use of mosquito netting, avoiding stagnant pools of water and careful use of quinine and chloroquine. Communities so affected are mostly frail and weak even if they have access to better nutrition and clean water. They are more susceptible to other diseases and injuries and heal poorly.	The disease thrives in marshy areas with stagnant water around overcrowded housing and squalor. Malaria remains endemic in many parts of the world. Spread to other countries is mostly by travellers coming from Malaria affected areas
		LINK: WHO Bulletin, Epidemics and emergencies https://www.who.int/malaria/areas/epidemics_emergencies/en/		

	Fiji Measles Pandemic	Contracted by members of the Fijian royal party while visiting Australia. LINK: National Library of Australia, The Measles in Fiji https://trove.nla.gov.au/newspaper/article/11514531	The royal party brought the disease back to their island, and it was spread further by the tribal heads and police who met with them upon their return. Spreading quickly, the island was littered with corpses that were scavenged by wild animals, and entire villages died and were burned down, sometimes with the sick trapped inside the fires Symptoms include sudden chills and headaches, sore throat, laryngitis and bronchitis.	After Fiji ceded to the British Empire, a royal party visited Australia as a gift from Queen Victoria. They arrived during a measles outbreak and were not warned of the danger of infection The first significant flu pandemic started in Siberia and Kazakhstan, travelled to Moscow, and made its way into Finland and then Poland, where it moved into the rest of Europe. By the following year, it had crossed the ocean into North America and Africa. By the end of 1890, 360 000 had died
1889	Russian flu pandemic	It started in St Petersberg Russia infecting around 50% of the population. Government officials in Russia and America trivialized the disease initially and this contributed to its rapid spread across Europe, the USA and Britain. Within months, every country was affected	Young adults had relatively mild symptoms but chronically ill and immune-compromised people were more seriously affected It was transmitted through human contact on railways, and on roads and along rivers and ports. Washing down surfaces and equipment with a carbolic acid solution reduced cross-infection at the turn of the century. The 'Carbolising' of furniture and equipment between patient uses continued until mid 20th century.	LINK: National Center for Biotechnology Information (NCBI) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC702749/
1890 1977	Russian flu or Asiatic flu (similar to H1N1) killed over 1 million people worldwide in 1890. This was the first of three 'Russian Flu' pandemics LINK: International Journal of Infectious Diseases, Historical analysis of the 1889-1890 Pandemic in Europe https://www.jjjdonline.com/article/S1201-9712(08)00369-X/fulltext			
1918	Spanish Flu	The first wave happened in 1918 and the second wave in Feb-March 1919. 50% of deaths were among people aged 20-24 years. Case fatality rate was 2.5% compared with 0.1% in other flu pandemics. LINK: Ancient History Encyclopedia, Spanish Flu https://www.history.com/topics/world-war-i/1918-flu-pandemic	Spain reported a flu outbreak in Madrid at the end of WW2 and the pandemic was named after the location of the first report. Other countries already had outbreaks but had not reported it. This was avian-borne flu (H1N1 and H7N7) infected 500 million people and killed 50 million worldwide	The 1918 flu was first observed in Europe, the USA and parts of Asia before swiftly spreading around the world. The flu threat abated within a year due to the high death rate and immunity developed by those who recovered No effective drugs or vaccines were available to treat this flu. Viruses were virtually unknown. People were made to wear masks, use handkerchiefs and stop spitting in public. Businesses and schools were closed. Bodies of victims were stored in temporary morgues and buried in mass graves. LINK: Ancient History Encyclopedia, Spanish Flu https://www.history.com/topics/world-war-i/1918-flu-pandemic

Table 1 *Continued*

Period	Infectious outbreak	Location	Nursing involvement	Sequelae
1916 – 1960s	Poliomyelitis	Outbreaks occurred around the world throughout the 20th Century with major outbreaks in 1916 and 1952. Estimated numbers are greater than reported case numbers.	The disease affects mainly children who are immobilized by paralysis which affects breathing ability. Early treatments involved being in an iron lung to maintain breathing and eventually some were able to breathe independently but many others were dependent on the iron lung for many years. The availability of vaccines has made the prevention of polio a possibility, however, the cost of vaccine programmes is a deterrent for poorer societies or fragile nation states. In the 1980s the Salk vaccine was included in many national immunization programmes	Iron Lungs were used from 1939 and the death rate fell. Vaccines developed in the 1950s remain in use. Survivors of childhood polio can experience post-polio Syndrome and weakening of muscles that were affected in childhood. Muscle atrophy and general weakness vary between cases. Some develop problems breathing and swallowing and are prone to pneumonia. It is only spread between polio survivors. The condition is often misdiagnosed by physicians.
		LINK: Rahmandad, Hu et al (2010) https://vtcc.hworks.lib.vt.edu/bitstream/handle/10919/49629/S0950268810001676a.pdf?sequence=1	LINK: National Institute of Neurological Disorders and Stroke, Post Polio Syndrome https://www.ninds.nih.gov/Disorders/Patient-Care-Giver-Education/Fact-Sheets/Post-Polio-Syndrome-Fact-Sheet	LINK: Science Direct, A postmodern Pandora's Box: anti = vaccination misinformation on the Internet https://www.sciencedirect.com/science/article/pii/S026410X09019264
Early 20th century	Diphtheria	Outbreaks occur in impoverished or fragile states where vaccination of children is not provided. Often children who are infected also suffer malnutrition and possibly cholera.	Vaccines first developed in the 1920s and refined in the 1940s have become a routine addition to childhood immunization regimes that include tetanus and whooping cough vaccination.	There is a small but growing resistance to having children vaccinated. Arguments against vaccination include individual right to choose, fears about safety and effectiveness, conspiracy theories and believing misinformation. Distrust of health practitioners is also present and an embracing of natural processes and remedies.
		LINK: AAP NEWS, Diphtheria: a largely forgotten disease because of vaccine https://www.appublications.org/news/2018/03/01/fdsnapshot030118		

1957	Asian flu	First in Hong Kong then to mainland China ad USA and England. LINK: National Center for Biotechnology Information (NCBI), British Journal of General Practice: the Asian Flu Pandemic	The disease ranged in severity from a 3-day mild illness to a deadly pneumonia. A vaccine was developed, effectively containing the pandemic. However, it lasted for around 11 years causing severe pneumonia among vulnerable groups in the population.	The H2N2 virus mutated over the following decade and disappeared. However, as a result of the antigenic shift that altered it, it became the H3N2 virus that caused the 1968 pandemic
1968	Hong Kong Pandemic (H3N2 Pandemic)	Some believe it started in the USA, affecting mostly older adults, spread worldwide killing over 1 000 000. Another new flu reported from South-East Asia within a decade of the Asian flu pandemic was named after the location reporting the outbreak LINK: Centers for Disease Control and Prevention (CDC): 1968 Pandemic (H3N2 virus) https://www.cdc.gov/flu/pandemic-reources/1968-pandemic.html	Cross-species transmission has been observed. LINK: National Center for Biotechnology Information (NCBI) Journal of emerging Infectious diseases: Influenza Pandemics of the 20th Century https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291411/	This flu has become a seasonal epidemic due to antigenic drift (or mutation) so that flu vaccines need to be upgraded each year to be effective
1976	Swine flu	An outbreak in the USA at a military base was anticipated to become a pandemic (spread to other countries). A strong vaccination programme prevented pandemic however the flu did infect many American citizens LINK: WHO Bulletin, Swine flu of 1976 https://www.who.int/bulletin/volumes/87/6/09-040609/en/	The vaccination programme reached a quarter of USA citizens. Reports of adverse reactions to the vaccine discouraged people from accepting it. Links with Guillain-Barré Syndrome causing paralysis, respiratory arrest and death stopped the vaccination programme.	The outbreak that occurred with this flu was accompanied by warnings from medical advisors about the need to vaccinate and quarantine those with the disease. The credibility of medical advisers was criticized and the general public, media and governments developed a level of scepticism that remains a feature of USA response to infectious disease control strategies.
		I was generally believed that the government had reacted too quickly in response to the outbreak.	I was generally believed that the government had reacted too quickly in response to the outbreak.	

Table 1 Continued

<i>Period</i>	<i>Infectious outbreak</i>	<i>Location</i>	<i>Nursing involvement</i>	<i>Sequelae</i>
1977	Russian Flu pandemic The H1N1 virus returned to Russia from China, seriously affecting children and adults under age 23 years	Within a year the virus had spread across the world but, because only youths were affected, there was some argument that this outbreak was not a true pandemic LINK: 1977 Russian Flu Pandemic https://www.globalsecurity.org/security/ops/hsc-scen-3_pandemic-1977.htm	Older members of the population had developed some immunity from previous outbreaks of H1N1. Vaccines were available for the 1978 season when the virus transmission increased.	The origins of this virus are still being debated. Some evidence suggests that it was part of a GOP (Gain of function) experiment and escaped during a laboratory accident. Moratoriums exist on funding the development of biological weapons and international scrutiny on nations with the capacity to develop and release such attacks is increasingly vital.
1981	HIV/AIDS AIDS destroys a person's immune system, resulting in death from other opportunistic diseases. Since 1981 over 25 million people have died from the disease and 33 million are living with this retrovirus	The disease developed in West Africa in the 1920s. Cases were noted in Haiti in the 1960s, and a decade later in New York and San Francisco, USA. LINK: AVERT, Global information and education on HIV and AIDS https://www.avert.org/professionals/history-hiv-aids/overview	AIDS is transmitted through blood and body fluids. Symptoms of infection with HIV include fever, headache, and enlarged lymph nodes in the initial stages. Carriers, after all symptoms have gone, infect others through blood and genital fluid and start the ongoing destruction of T-cells in the newly infected person. Antiretroviral treatment is available to slow disease development but much depends on the person ensuring that they do not infect others. Worldwide, 35 million people have died of AIDS and the search for a cure continues.	In 2017 19.5 million people living with the disease (around half of all who have it) were receiving treatment. Risks to young females in Sub-Saharan African countries remain where sexually penetrating virgins is viewed by some males as a cure. The number of infections in young females is decreasing due to better education and economic support and opportunities to be independent. LINK: National Center for Biotechnology Information (NCBI) https://www.ncbi.nlm.nih.gov/pubmed/12627683 On Health: Pictorial Timeline of the HIV/AIDS pandemic https://www.onhealth.com/content/1/hiv_aids_history LINK: National Center for Biotechnology Information (NCBI) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2978669/

			Quarantine efforts proved effective in all affected countries and the virus was contained and hasn't reappeared. The People's Republic of China was criticized for trying to suppress information about the virus at the beginning of the outbreak. SARS was seen by global health professionals as a wake-up call to improve outbreak responses, and lessons from the pandemic were used to keep diseases like H1N1, Ebola and Zika under control. Most countries affected in 2003 have used the learnings gained then to deal with the current COVID-19 pandemic.
2003	SARS Severe Acute Respiratory Syndrome (SARS-CoV)	Originated in 2002 in Guangdong, China where the virus developed in bats, transferred to cats and then to humans. It spread to 26 countries infecting over 8,000 people in Toronto in Canada, the Hong Kong Special Administrative Region of China, Chinese Taipei, Singapore, and Hanoi in Viet Nam. LINK: WHO, SARS (Severe Acute Respiratory Syndrome) https://www.who.int/ith/diseases/sars/en/	SARS is spread through coughing and sneezing droplets that others breathe in. Symptoms include dry cough (initially), shortness of breath, fever, headaches, joint aches and diarrhoea in the first and/or second week of infection. Although fever is the most frequently reported symptom, it is sometimes absent on initial measurement, especially in elderly and immunosuppressed patients Severe cases of respiratory distress require intensive care and ventilation. Vaccines are experimental at this stage. Prevention includes travel restrictions and quarantine
2009	Swine flu	A new H1N1 virus was detected in the USA and spread across that country and the world LINK: Centers for Disease Control and Prevention (CDC); 2009 H1N1 Pandemic (H1N1)pdm09 (virus) https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html	Within a year the USA reported 60.8 million cases. An estimated 575,400 people worldwide died during that first year, 80% of whom were aged under 65 years. LINK: Centers for Disease Control and Prevention (CDC); 2009 H1N1 Pandemic (H1N1)pdm09 (virus) https://www.cdc.gov/flu/pandemic-reources/2009-h1n1-pandemic.html
2012 – 2015	MERS-CoV (Middle Eastern Respiratory Syndrome) This coronavirus outbreak in 2012 was reported in Saudi Arabia after originating in Jordan. The death rate is up to 40% for those who contract the disease	The MERS-CoV continues to exist in a controlled status. It affects all ages similarly and has the potential to re-emerge under favourable conditions to become another pandemic (2018). LINK: Centers for Disease Control and Prevention (CDC);Middle East Respiratory syndrome (MERS) https://www.cdc.gov/coronavirus/mers/about/index.html	MERS-CoV continues to exist in a controlled status. It affects all ages similarly and has the potential to re-emerge under favourable conditions to become another pandemic (2018). The infection is probably caused by contact with camels or raw camel products. Other animals (goats or sheep) may also have the coronavirus. LINK: Pandemic International: MERS Overview https://pandemic.internationalsofs.com/overview/w/mers-overview

Period	Infectious outbreak	Location	Nursing involvement	Sequelae
2019	COVID-19 (or nCoV) On 11 March 2020, the World Health Organization announced that the COVID-19 virus was officially a pandemic. Responses to the pandemic vary between countries, some nations whose leaders trivialized it and delayed control measures are experiencing extensive civilian deaths LINK: Ancient History Encyclopedia, Pandemics that changed history https://www.history.com/topics/middle-ages/pandemics-timeline	First detected in Wuhan, China on 31 Dec 2019, and reported by Dr. Li Wenliang in defiance of his government's orders. WHO declared a Public Health Emergency of International concern in late January 2020 and renamed COVID-19 on 11 February 2020. Pandemic status was announced by WHO on 11 March 2020 and by mid-March 163 countries reported cases	Symptoms begin with mild respiratory irritation then fever and cough and can lead to pneumonia and death. It is spread through droplets from SARS coughs, saliva and sneezes. LINK: RACGP, How does coronavirus compare with previous global outbreaks? https://www1.racgp.org.au/news/gp/clinical/how-does-coronavirus-compare-with-previous-global-outbreaks	Much is not known or confirmed about the infectious period, aetiology, recovery times, antigen response and sequelae of the disease. There is growing evidence that victims who recover may have increased thrombus formation in the heart and lungs, with a risk of stroke and/or diabetes. Some small children may have peripheral circulation issues similar to Kawasaki Disease. The research is yet to confirm these observed trends

for lives and livelihoods needs to be accurate, consistent and understandable. Nurses will have opportunities to influence health policies in the current pandemic environment and should embrace such opportunities. We only have to turn to the work of Florence Nightingale as a powerful health reformer. She was able to influence government, politicians and medical dynasties with her clarity of message and logical, evidence-based recommendations in both war and peace times.

Public capacity to manage infection

For many countries, including some economically developed world powers, the low level of education and health literacy of a majority of citizens prevents their participation in activities that will prevent contagion from spreading and assist in the effective treatment of any who become infected. Some, through ignorance, may mythologize the infection as 'punishment from God' (see 600 BC Leprosy) or seek magical cures from special people (see 1720 'Royal touch' for tuberculosis) or untested alternative cures. Currently, a small but growing group of people is resisting having their children vaccinated because they believe it is unnatural or that it causes the disease itself. In some countries, unvaccinated children are restricted from participation in group activities such as kindergartens and public schools. Nurses working at the front line of infection control need to be well-informed about the reasons for denying vaccine protection to children and be able to provide and explain researched evidence for them to consider.

The international competition for commodified education is at the heart of the decline in public capacity to understand and respond effectively to crises. Without the intellectual skills to critically evaluate information and proposals for engagement, people may revert to tribal patterns of response rather than civil discourse. People who are systematically disadvantaged in this way are more easily manipulated and exploited by those they trust to lead. Nurses can provide information and leadership within these communities and will need to do so if disadvantaged people become further alienated from the mainstream of society once the pandemic is controlled.

Destabilization of national agendas

Pandemics result in wholesale death and destruction of civil systems in affected nations and internationally. Civilizations have crumbled (see Aztecs 1520 BC), social class systems have collapsed (see 1453 Britain's feudal system), belief systems replaced (see 549 Spread of Christianity), and even planetary weather systems have been altered (see 1492 Columbus exchange). It would be unwise to underestimate the impact of pandemics on the way our worlds are currently perceived and organized. The COVID-19 pandemic has resulted in

widespread unemployment and destabilization of national productivity in all countries. Previously established trade agreements have been undercut by nationalistic priorities (stockpiling, price gouging, repatriation of manufacturing, etc) and trust between nations may take some time to be re-established. Nursing is an international network that relies on the open sharing of information and working together on issues affecting all. Restrictions to this network by national governments intent on restricting scientific information and expertise could undermine nursing's expert credibility and fracture the trust that binds our global professional network.

Persistent scarcity

The economic cost each nation has expended in response to the COVID-19 pandemic is similar to responses made throughout history. Societies depleted of financial resources and confronted by high population mortality rates may face civil unrest and political upheaval. Some industries may cease operations and others may thrive, but the availability of people to take up employment in some countries will be limited because they may have moved out of cities and taken up different lifestyles – or died. Scarcity in most societies fosters competition and polarization of wealth and advantage. Disadvantaged people will survive as best they can and eventually experience health and social problems because of poverty and alienation. Government and social support for people disenfranchised by the pandemic will need to be effective to maintain social harmony, law and civil order. Nurses will have to be aware of these trends within their communities and be able to ensure that supplies of essential equipment, drugs and personnel are available. Ensuring that nursing is accessible to disadvantaged communities is a policy endeavour that some nurses may need to initiate.

Endemic COVID management

As has happened with influenza and bubonic plague outbreaks (see table), it is likely that COVID-19 will be controlled but not eradicated. For nursing, this means that the future could include seasonal outbreaks of this contagion that require quarantine and even periodic closing of venues and events involving large numbers of people. The lack of preparedness of governments for the 2020 response is instructive to nurses who rely on personal protective equipment and testing equipment, signage and clinics, to respond effectively and safely. Supply chains for essential equipment for future outbreaks are of interest to nurses and will need to be controlled by them to be available for future outbreaks. Nurses will also need to revise staffing models to allow for up to 50% of nurses to be isolated or in quarantine for most of the

time. If an effective vaccine is developed, and if it is made available to those who need it, nurses will also be on the front line of vaccination and public education programmes.

The resourcing of nurses in sufficient numbers to achieve efficient deployment during infectious outbreaks will need to be argued in terms of organizational priorities and the consequences of not being able to staff infectious disease control strategies. The number of nurses available internationally is monitored by the World Health Organization (2019), and each nation maintains a nurse-to-population density to suit its own local needs as they perceive them. In countries such as the People's Republic of China, nurse numbers have long been maintained among the lowest global ratios per 1000 population, making the loss of even a small number of nurses to a pandemic, disastrous. Other countries with ratios above 9-10 nurses per 1,000 population are better positioned to respond effectively to such public health emergencies, but in all circumstances, nurses must never be regarded as expendable. Not reporting the number of nurses or other healthcare workers who have died or become infected as a result of pandemic work is an indication of an unacceptable, dismissive attitude. Due attention needs to be given to the preservation of our vital workforce and priority given to the protection of nurses working in risky environments.

Conclusion and implications for nursing and policy

History tells us that pandemics affect more than the health of populations. The potential for breakdown of social order and increased competition in an environment of scarcity will pose ongoing threats to safety and wellbeing as well as causing economic decline and social disconnection. Nurse survivors who now lead the response to the COVID-19 pandemic will be in a position to influence the reformation of social and health policies to be better prepared for future infectious outbreaks. Over-reliance by nurses on regulators and administrators for resources, protection, or even early warnings, and open disclosure about contagion details and risks needs to be reduced. Nurse morbidity and mortality data in this context are fundamental to supporting future nurse safety. It is time nurses involved themselves in revising public policies and reforming health systems that could, if not guided, return nurses to hazardous work environments and trivialize foreseeable risks to us all.

Reference

World Health Organization World Health Data Platform. (2019) Available at: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-\(per-10-000-population\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-(per-10-000-population)) (accessed 20 May 2020).